



1903.

BOROUGH OF PUDSEY.

FOURTH

ANNUAL REPORT

OF THE

MEDICAL OFFICER OF HEALTH.

WILLIAM LOVELL HUNTER,

M.D., D.P.H.

PUDSEY :

TOM STILLINGS, PRINTER, "PUDSEY NEWS" OFFICE, LOWTOWN.

SANITARY COMMITTEE.

1903.

CHAIRMAN :

ALDERMAN J. E. GOODALL.

MEMBERS :

HIS WORSHIP THE MAYOR.

(MATTHEW WALKER, J.P.)

ALDERMAN R. V. BOWLING,

COUNCILLOR J. NICHOLSON,

„ O. T. STOCKWELL,

„ J. W. TURNER,

„ G. E. VERITY,

„ S. WADE,

„ C. WILSON,

TO THE
MAYOR, ALDERMEN and COUNCILLORS
OF THE
BOROUGH OF PUDSEY.

GENTLEMEN,

In compliance with the Order of the Local Government Board I present my **Annual Report** on matters affecting the health of the Town during 1903.

The **Birth-rate** which had been steadily declining for some years made a further sudden drop from 25.6 in 1901 to 21.1 in 1902. The same low level—21.4—was maintained in 1903.

The **Health of the Town** for the year was on the whole fairly good. The **Death-rate** was the lowest on record. It is interesting and satisfactory to compare the average death-rate—14.8—for the last four years (1900-1903) with that—18.4—for the four previous years (1896-1899).

The Local Government Board desire information on the **Sanitary Work** that has been done, is being done, and needs to be done. The following brief remarks refer to certain matters that ought to be brought into prominence.

The cleansing, or **Scavenging** of the Town comes first in importance. Year after year I have reported a steady improvement in this department, and 1903 was no exception. The work was not only done more efficiently than ever before, but, compared with the previous year it was done at less cost. On this point I would draw your particular attention to the Sanitary Inspector's report on Page .

Adoption of Water-Carriage System.—Up to the end of 1902 about one-third of the objectionable privy-middens had been replaced by water-closets and moveable dust-bins. The work progressed well during 1903. As the public are being rapidly educated to appreciate the advantages of the change, both from the points of health and decency, it may be assumed that this most desirable sanitary development will continue. See Page 16.

The **Removal of Nuisances** has been regularly attended to. Under the new arrangements cases needing structural work for their abatement—such as faulty house drainage—are carried out by the surveyor's department, and the Borough Surveyor is personally responsible for the work. I have no hesitation in saying it is efficiently done. See Surveyor's Summary on Page 18.

The **Equipment and Arrangements for dealing with Infectious Diseases** are fairly satisfactory, except in one important particular,—that is, more efficient administration for checking the spread of those diseases in the public schools. The matter is an extremely difficult one to deal with, but as the school authorities have promised their hearty co-operation in supporting the sanitary department good results are likely to follow.

It is pleasanter to record work that has been done, than to urge the necessity for further efforts, but in the interests of the public health it is my duty to lay stress on the importance of at least two matters that deserve the earnest attention of the Council.

One is the **Sewering, Levelling, Paving, &c., of the many Private Streets** where this very necessary sanitary work has not been already done. For ten or eleven years before 1902 the march of progress in this direction was steady, although slow; one or two streets were taken in hand each year. For the last two years passivity, or what is described as “marking-time,” has been the policy of the authority. In this connection one most important fact should not be forgotten, that is, unless the private streets are are sewered and drained the town does not get the benefit of the large sum spent on the main sewerage.

The other is the **covering of the public and private streets, footpaths and yards near houses with some impervious surface**, such as paving, asphalt or concrete. It requires no argument to prove that this would conduce not only to the improved appearance, cleanliness and comfort of the place, but would prevent soil pollution with its attendant evils. A beginning of the work was made during the year by the asphaltting of the public path between Radcliffe Lane and New Street.

The district is protected from the selfish injury of jerry builders by the possession of **Model Building Bye Laws**. I am so convinced of their beneficent effect that I hope neither the Sanitary Authority nor the Local Government Board will undo the good which those Bye Laws are doing, by sanctioning any important modification of them. After the three years spent in consultation between the local Authority and the Local Government Board, before they were finally adopted, it would be illogical to agree to their emasculation.

I remain, gentlemen,

Yours faithfully,

W. L. HUNTER.

Borough of Pudsey.

Annual Report of the Medical Officer of Health.

The **Area** of the Borough is **2409** acres.

The **Population** in **1901** (census) was **14,907**.

The **estimated Population** for **1903** was **14,940**.

The **Rateable Value** for **General District** purposes was **£46,654**, and for **Poor Rate** purposes was **£52,877** in **1903**.

The **District Rate** was 3s. 10d.

The **Poor Rate** was 4s.

The Borough is divided into **Six Wards**.

Topography.—The district is roughly pear-shaped, the stem end being West and the broad end East. It is bounded on the North by the Urban Districts of Calverley and Farsley, and the City of Leeds; on the East by Leeds; on the South by Leeds and the City of Bradford; on the West by the City of Bradford.

Altitude.—The height above the sea level varies from 225 feet at Houghside to 625 at Greentop.

Geology.—Coarse grained gritty sandstone, with beds of shale, limestone, and coal. The subsoil consists of clay, clayey loam, and shale.

Industries.—There are 32 mills or factories in the town. The chief trades of the place are woollen and worsted (18 mills), iron-works (3), tanning (1), bootmaking (1), cabinet making (3), mineral water making (3), fender making (1), electro-plating (1). Stone Quarrying is also an important industry.

CAUSES OF, AND AGES AT, DEATH DURING 1903.

CAUSES of DEATH.	Deaths in whole Districts at Subjoined Ages							Deaths in Wards					
	All ages	under 1.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and up-wards	Fulneck	Chapel-town	Green-side	Central	Low-town	Stan-ingley
Small-pox													
Measles	8	3	5							1	1	1	5
Scarlet fever	2				1	1			1			1	
Whooping-cough ...													
Diphtheria and mem- branous croup ...													
Croup													
Fever { Typhus	1					1							1
Enteric													
Other continued													
Epidemic influenza ..	1						1		1				
Cholera													
Plague													
Diarrhœa	2	2						1					1
Enteritis	1					1					1		
Puerperal fever ...													
Erysipelas													
Other septic diseases...	1					1			1				
Phthisis	10				1	8	1	1	2	2	1		4
Other tubercular dis.	8		5	2	1			1	2	2			3
Cancer, malignant dis.	14	1			1	10	2	2	3	4	2	1	2
Bronchitis	13	3	2			3	5	4	2	3	1	2	1
Pneumonia	12	3	3	1		3	2	2		1	2	2	5
Pleurisy													
Other Respiratory dis.	1						1				1		
Alcoholism } Cirrhosis of Liver }	5				1	3	1	1	1			2	1
Venereal Diseases ...													
Premature birth ...	11	11							5	1		1	4
Diseases and accidents of parturition ...	3					3				1		1	1
Heart diseases ...	16			2		8	6	4	1	4	2	3	2
Accidents	5		1		2	1	1		1		1		3
Suicides	3				2	1						2	1
Apoplexy, Paralysis ...	22					9	13	6	6	3	1	5	1
Diabetes	5					1	4		1	2		1	1
Kidney Diseases ...	5		1			4		1	1	2	1		
Pernicious Anæmia ...	4					4		1			2		1
Acute Rheumatism ...													
Old age, Natural decay	17					1	16	5	2	3	2	4	1
All other causes ...	38	14	5	1		7	11	4	5	7	4	7	11
All causes	208	37	22	6	9	70	64	33	35	36	22	33	49

Vital Statistics.—Calculated on the population estimated in the middle of 1903—14,940.

The **Births** registered during the year numbered 320 (males 160, females 160), giving a **Birth-rate** of **21.4** per **1000**.

The **Deaths** for the year numbered 208 (males 93, females 115), giving a **Death-rate** of **13.85** per **1000**.

The Deaths of Infants under one year numbered 36, and calculated on the number of children whose births were registered during the year gave an **Infantile Death-rate** of **112**.

The Deaths from the principal Zymotic Diseases, namely,—Smallpox, Measles, Scarlet Fever, Whooping Cough, Diphtheria and Membranous Croup, “fever” (typhus, enteric and simple continued) and Diarrhœa numbered 13, giving a **Zymotic Death-rate** of **.87** per **1000**.

There were 25 deaths from Bronchitis, Pneumonia and Pleurisy, giving a **Respiratory Death-rate** of **1.7** per **1000**.

There were 10 deaths from Phthisis, giving **Phthisis Death-rate** of **.66** per **1000**.

ENGLAND and WALES.

VITAL STATISTICS FOR THE YEAR 1903.

1903.	ENGLAND AND WALES.	Seventy- six great Towns.	One hun- dred and three small- er towns.	England and Wales <i>less</i> the 179 Towns
BIRTH-RATE - -	28.4	—	—	—
DEATH-RATE - -	15.4	16.3	14.6	14.8
Zymotic Death-rate - -	1.46	1.89	1.41	1.08
Infantile Mortality - - (per 1,000 births)	132	144	135	118

It may be noted that both the Birth-rate and the Death-rate are lower than ever previously recorded for England and Wales.

Births.—The Birth-rate (21.4) is .3 higher than for the previous year and is 4.8 below the average for the last 10 years.

Illegitimate Births.—16. This is 1.8 per cent. of the total Births and is .9 less than the average percentage (2.7) for the last 10 years.

Still-born Children buried in the Cemetery—22. This is a decrease on 31 in the previous year. The law imposes a penalty of £10 upon any person who buries the body of a deceased child as if it were still-born.

Deaths.—The Death-rate (13.85) is the lowest that we have any record of. It is 1.55 lower than that of the previous year (15.4). It is 3.15 below the average (17) for the last 10 years.

Deaths registered due to Old Age—17.

Deaths above 80 years of age—10 (the oldest being 89 years).

Uncerticated Deaths registered—1.

Inquests held—16.

Suicides 3 (all by drowning).

Accidents—5 (run over by train 1, injury to brain—falling downstairs 1, drowning 1, injury to brain by dart 1, injury to brain 1).

Natural Causes—8. (Apoplexy 1, Pneumonia 1, Syncope 1, Convulsions 2, Heart Failure 1, Twist of Bowels 1, not defined 1.

Cancer.—The number of deaths (14) shews an increase of 1 on the average (13) of the last 10 years.

Part of body affected :—

Rectum 3, Tibia 1, Breast 1, Stomach 2, Pylorus 2, Scalp 2, Abdomen 2, Neck 1.

Deaths of Inhabitants of Pudsey outside the District—1903.

PLACE OF DEATH.	SEX.	AGE.	CAUSE OF DEATH.
LEEDS ...	M.	41 Yrs.	Cholelithiasis—Operation.
BRADFORD ...	M.	3 Yrs.	Empyema--Miliary Tuberculosis
HULL ...	M.	55 Yrs.	Found Drowned, Inquest.
WAKEFIELD ...	M.	45 Yrs.	Bronchitis.
„	M.	75 Yrs.	Bronchitis.
„	F.	48 Yrs.	Phthisis Pulmonalis.

Infantile Mortality.—The Infantile Death-rate (**112**) was exceptionally low—probably on account of the absence of epidemic diarrhœa, due to the cold summer.

The causes of death were as follow :—

DISEASE.	MALE.	FEMALE	TOTAL
Convulsions... ..	6	4	10
Premature Birth	4	5	9
Bronchitis	4	1	5
Pneumonia	1	1	2
Insufficient Vitality	1	1	2
Diarrhœa	1	1	2
Tubercular Meningitis		1	1
Lymphadenoma		1	1
Spina Bifida		1	1
Dentition		1	1
Eczema	1		1
Measles	1		1
Total	19	17	36

WARD STATISTICS, 1903.

WARD.	BIRTHS.		DEATHS.		RESPIRATORY DEATH RATE.	ZYMOTIC DEATH RATE.	NOTIFICATIONS PER 1000 POPULATION.
	Number	Rate	Number	Rate			
FULNECK ...	55	20.8	33	12.5	2.3	—	11.7
CHAPELTOWN	42	18.7	35	15.5	.89	.44	9.8
GREENSIDE	53	24.4	36	16.5	1.8	.45	13.8
CENTRAL ...	47	19.5	22	9.1	1.2	.3	5.4
LOWTOWN ...	50	25.0	33	16.5	2.0	1.0	4.0
STANNINGLEY	74	21.3	49	14.1	1.7	1.7	7.8

DEATHS OF CHILDREN UNDER 1 YEAR—IN WARDS.

WARD.	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Fulneck ...				1				1		1		
Chapelton...		1	1	1	1						4	
Greenside ...	1	1			2	1			1	1	1	
Central ...	1		1	1	1		1					1
Lowtown ...	1				1		1				1	1
Stanningley		1	1		2				1			1
Totals ...	3	3	3	3	7	1	2	1	2	2	6	3

Table Showing Population, Births, &c., in other Towns in the West Riding from which Returns were received.

City or Town.	Population 1903.	Births.		Deaths.		Zymotic Death Rate.	Phthisis Death Rate.	Respira- tory Death Rate. Exclud'g Phthisis	Infantile Deaths per 1000 Births.	No. of Notifica- tions Received.
		Number	Rate per 1000	Number.	Rate per 1000.					
Leeds	443,559	12,996	29.4	7,334	16.6	1.74	1.27	3.97	153	
Huddersfield	94,973	2,252	23.79	1,584	16.73	0.84	1.44	3.22	120	
Halifax	106,800	2,248	21.0	1,592	14.9	0.66	1.2	2.8	124	Includ. 973 C. Pox 328
Barnsley	42,400	1,575	37.14	845	19.2	3.79	1.13	5.09	175	293
Keighley	43,120	1,023	23.7	663	15.3	.69	1.39	3.29	140	143
Batley	30,694	843	27.4	569	18.5	1.8	Not to hand	Not to hand	162	251
Liversedge	14,336	382	26.6	205	14.2	.83	1.04	2.2	141	105
Ossett	13,377	350	26.16	202	15.1	0.82	0.89	2.24	131	84
Brighouse	22,076	501	22.7	245	11.1	.81	1.17	2.53	120	72
Pudsey	14,940	320	21.4	208	13.85	0.87	0.66	1.7	112	131

Infectious Diseases.—Although the Death Rate from this class of diseases was not high, yet the number of cases was large.

Small Pox:—

Number of Cases Notified	...	...	8
Number of Deaths	...	...	0
Death-Rate per 1000 living...	...	...	0
Case Mortality per 1000 cases	...	...	0
Number of Cases removed to Hospital			8

Of these Cases, one was notified in February, one in April, and six in March, five of whom were in one family. Prompt measures, including extensive vaccination, were adopted to check the spread of the disease.

Diphtheria:—

Number of Cases Notified	...	...	7
Number of Deaths	...	...	0
Number of Cases removed to Hospital			2

At the end of 1902, what threatened to be a serious epidemic necessitated the closing of Primrose Hill School. Fortunately the preventive measures adopted appear to have checked the anticipated outbreak.

Scarlet Fever:—

Number of Cases Notified	...	...	97
Number of Deaths	...	...	2
Death-Rate per 1000 living	...	...	.013
Case Mortality per 100 cases	...	...	2.06
Number of Cases removed to Hospital			93

Although the number of deaths from this complaint was small, the number of cases was unusually large, and the cost of their treatment in Hospital is a serious charge on the rates. I think there is very little doubt that the disease is spread in the Schools, and that money spent in perfecting School Administration would lessen the number of cases, and prove to be wise economy.

Enteric Fever:—

Number of Cases	...	...	5
Number of Deaths	...	...	1
Number of Cases removed to Hospital			2

It is pleasant to record that of late years this disease has given us very little trouble, and I feel sure that this is to be attributed to the more efficient scavenging and the closing of private polluted wells.

Measles:—

Prevalent nearly all the year.			
Number of Deaths	...	...	8

Chicken-Pox, Mumps, and Whooping Cough.—These Complaints were also prevalent during the whole year, but caused no deaths.

CASES OF INFECTIOUS DISEASE NOTIFIED DURING THE YEAR 1903.

NOTIFIABLE DISEASE	At all Ages.	CASES NOTIFIED IN WHOLE DISTRICT.						TOTAL CASES NOTIFIED IN EACH LOCALITY.					NO. OF CASES REMOVED TO HOSPITAL FROM EACH WARD.						
		At Ages—Years.						Ful-neck	Chap-elton	Green-side	Cen-tral.	Low-town	Stann-ingley						
		Under 1.																	
		1 to 5.	5 to 15.	15 to 25.	25 to 65.	65 and upwards.													
Small-pox ...	8			3	5		7	1			7	1							
Cholera ...																			
Diphtheria ...	7	1	1	4	1		2	1	2	1	1		1		1				
Membranous Croup ...																			
Erysipelas ...	14		1	1	11	1	5	3	2	1	1	2							
Scarlet fever ...	97	19	68	7	3		24	18	15	11	6	23	23	17	14	11	5	23	
Typhus fever ...																			
Enteric fever ...	5		1		4				3			2		1	1				
Relapsing fever ...																			
Continued fever ...																			
Puerperal fever ...																			
Plague ...																			
Totals ...	131	1	20	74	11	24	1	31	22	29	14	8	27	23	18	23	12	6	23

Infectious Diseases Hospital.—The new block for Scarlet Fever—20 beds—was nearly completed and ready for occupation at the end of the year. An addition to the administrative block, new disinfecting rooms, and a lodge, have also been built, and improvements have been made in the laundry arrangements.

The Tables on pages 14 and 15 shew the number of admissions to the Hospital from the various districts for 1903 and previous years.

Calverley Joint Hospital Summary for 1903.

	Scarlet Fever.	Typhoid Fever.	Diph- theria.	Smallpox	Admitted	Dis- charged.	Died.
Pudsey	93	2	2	8	105	95	3
FARSLEY	20	2	2		24	20	1
CALVERLEY	19	5	1	1	26	20	
BRADFORD	5				5	8	
OUTSIDE DISTRICTS	3				3	1	
TOTAL	140	9	5	9	163	144	4

Number of Specimens sent to the County Council Bacteriological Laboratory during 1903.

Enteric Fever (Widal Re-action)	...	4
Sputum (for Tubercle Bacilli)	...	10
Diphtheria	...	27
Urine (for Typhoid Bacilli)	...	2

Table showing Total Admissions and Deaths for each year since the Hospital was Opened.

DISEASES.		1891 2 Months	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.	Total.	Deaths per cent.
SCARLET FEVER	Admitted	15	117	67	88	14	16	22	63	141	182	158	119	140	1142	3.2
	Died		7	1	3	1	1	1	6	2	3	4	4	3	36	
ENTERIC FEVER	Admitted	2	7	24	14	16	16	14	37	16	9	20	8	9	192	18.7
	Died		2	3	1	1	4	2	9	6		5	2	1	36	
SMALL POX	Admitted			55	11								2	9	77	3.9
	Died			3											3	
DIPHTHERIA	Admitted	1		3	2	9 some doubtful	1	2	16	7	5		8	5	59	11.9
	Died			1					1	2	2		1		7	
TOTAL	Admitted	18	124	149	115	39	33	38	116	164	197	178	137	163	1470	5.6
	Died		9	8	4	2	5	3	16	10	5	9	7	4	82	

WATER CARRIAGE SYSTEM.						CONSERVANCY SYSTEM.				
Ward.	W.C's Inside.	W.C's Outside.	Trough C osets.	Slop Closets	Dry Ashpits.	Dustbins.	Privies.	Pail Closets	Open Ashpits.	Covered Ashpits.
Lowtown	19	65		21	92	114	199		37	54
Central	58	78		25	90	98	319	11	26	129
Fulneck	45	102	48	15	150	163	254	5	54	84
Greenside	49	74	6	16	84	103	245	1	41	86
Chapelton	65	99	13	26	76	79	262	1	30	105
Stanningley	47	70	14	41	42	55	254		22	208
Total ...	283	488	81	144	534	612	1533	18	210	666

Table showing the sanitary conveniences, ashpits, dustbins, &c., in Pudsey, at the end of 1903.

Factory and Workshop Act, 1901.--The chief workshop industries on the **Register** are :

Dressmaking, Tailoring, Bootmaking, Millinery, and other Apparel	...	...	53
Bakehouses	...	...	19
Cabinet Making, Joinery	...	...	9
Laundries	...	...	2
Plumbing, Cycle Repairing, Basket Making, Hand- loom Weaving, Flock and Wool Cleaning and othet industries	...	...	35
			<hr/> 118 <hr/>

Cleanliness.—The Workshops in the district were inspected and their general condition with regard to sanitation was found to be satisfactory.

Air Space—Overcrowding.—None were found to be overcrowded, as judged by the requirements of the Act. It was not necessary to ask for any special ventilation. On account of the depression in trade the numbers employed were below the normal.

Wet Floors.—None were found.

Sanitary Conveniences.—The insanitary Privy-middens are steadily being replaced by approved single-pull water-closets, but in some of the larger factories some exceedingly insanitary conveniences are still in existence.

Out Workers.—Two outworkers and one contractor.

Bakehouses.—These are kept very clean. In some lime-washing is carried out three or four times during the year instead of twice as required by the Act. The bakers are of opinion that ovens work much better when thoroughly lime-washed and that the bread baked in them has a better appearance.

Undergrouud Bakehouses.—It was only necessary to certify one as fit for use, this being the only one underground in the district. One was opened in contravention of the Act, but the use of it was discontinued after a notice from the Authority.

Mortuary.—In his Annual Report for 1902 the County Medical Officer remarks :—

“ A Mortuary is a desirable adjunct to the Sanitary Equipment of an Urban Community. The absence of one often necessitates the retention of bodies in homes where they cannot be decently accommodated pending burial without danger to the health of the living inhabitants.”

Summary of Sanitary Work

Carried out under the supervision of the Borough Surveyor in 1903.

Number of Houses Drained	...	114
Feet of 9in. Drains laid	...	531
„ „ 6in. „ „ ...	...	2867
„ „ 4in. „ „ ...	...	3879
Number of Inspection Chambers constructed		53
„ „ Yard Gullies	...	202
„ „ Areas	...	21
„ „ Ventilation Shafts	...	85
„ „ Privies converted into Water Closets		42
Additional Water Closets Built	...	51

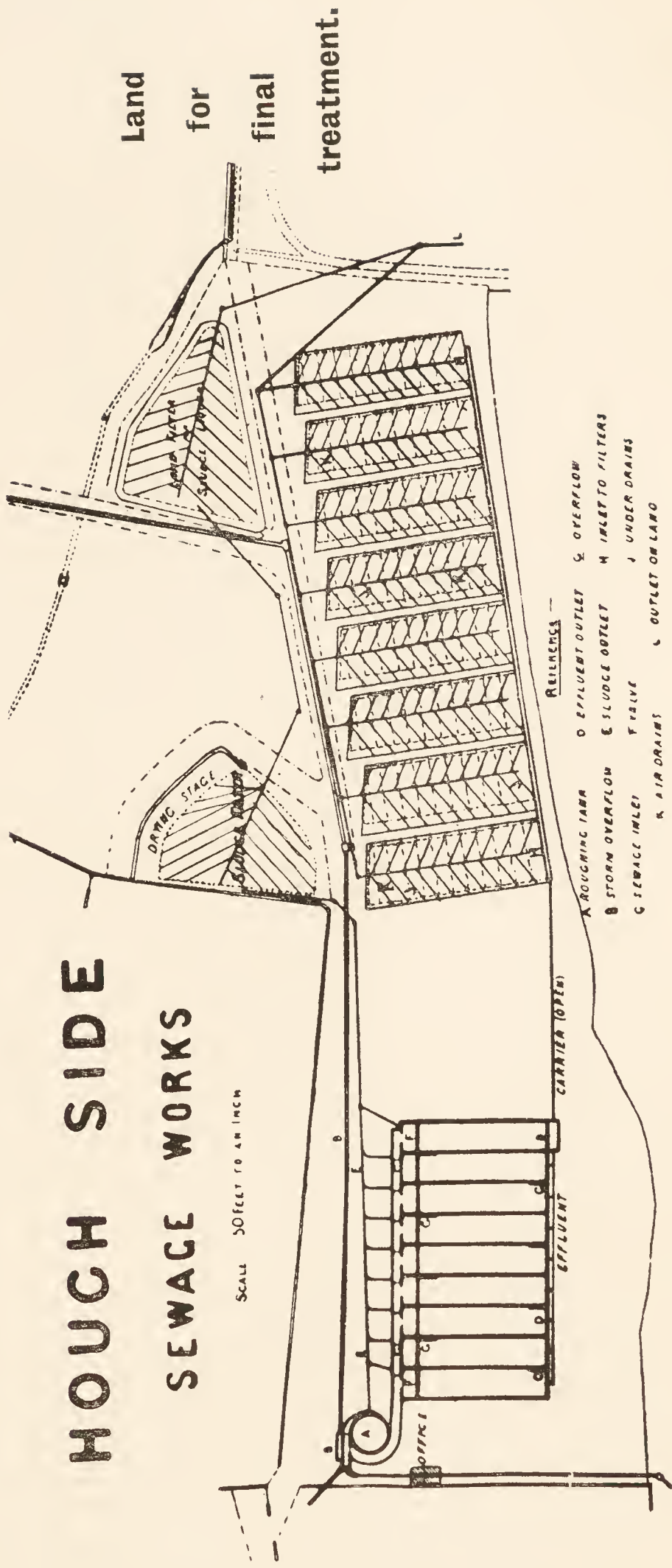
New Houses built in 1903	17
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Expenditure of Sanitary Department. 1903-4.

	£	s.	d.
Sanitary Accounts	360	11	1
Scavenging Accounts	684	7	1
Hospital Accounts	968	10	4
Total	2013	12	6

HOUGH SIDE SEWAGE WORKS

SCALE 50 FEET TO AN INCH



TANKS 9

HOUGH SIDE

SEWAGE WORKS

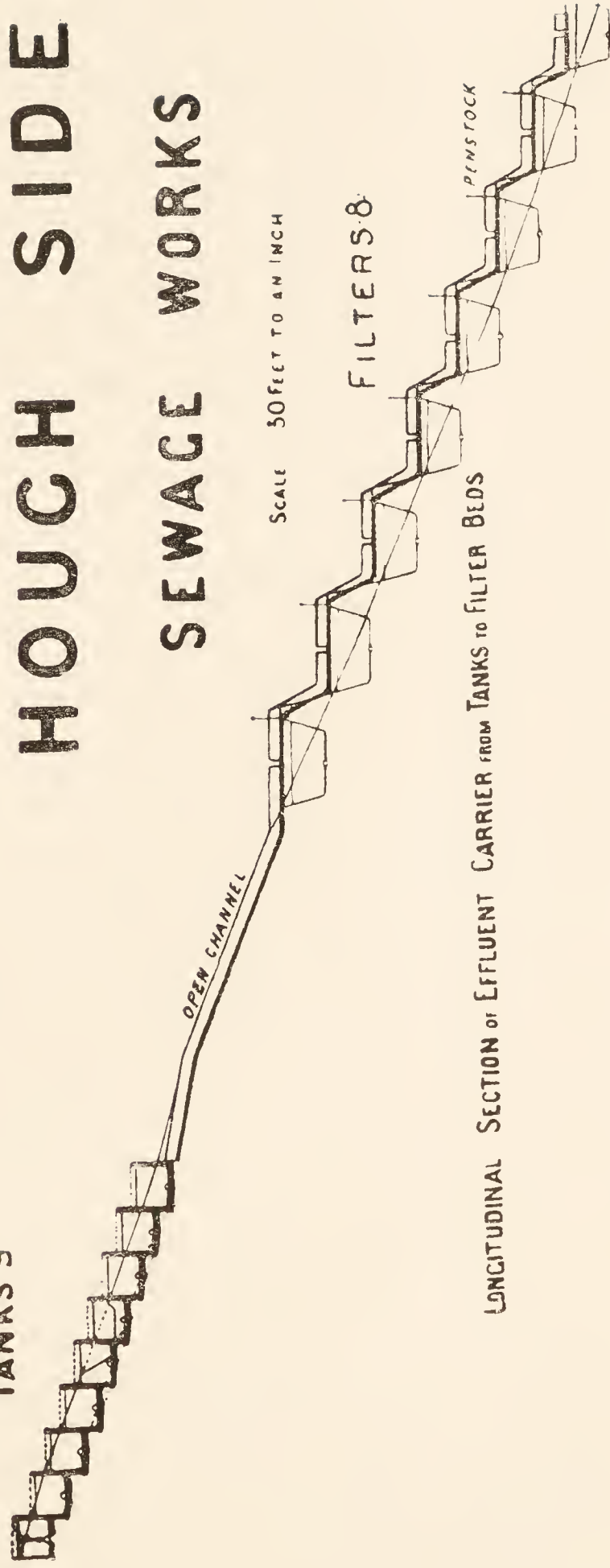
SCALE 30 FEET TO AN INCH

FILTERS 8

LONGITUDINAL SECTION OF EFFLUENT CARRIER FROM TANKS TO FILTER BEDS

PENSTOCK

OPEN CHANNEL



Sewage Works and Sewage Treatment.—The following description has been furnished to me by Mr. Joseph Jones, the Borough Surveyor.

Houghside Sewage Disposal Works.

Constructed in accordance with amended plans, sanctioned by the Local Government Board in 1899.

The average daily dry weather flow of sewage is estimated as follows —

Drainage Area served by the Works has	
Population of 12,000—at 23 gallons per head ...	276,000 gals.
Mills, 14, estimated sewage from ...	120,000 „

Total Flow of Sewage per day	396,000 gals.
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The tanks and filters are constructed to treat all the Sewage from the drainage area, both domestic and manufacturing.

The Sewage from Valley Road is conveyed to the works by a 21 inch pipe. The Sewage from Lowtown and Stanningley by a 24 inch pipe.

The Works comprise—

- One Detritus Tank.
- Nine Precipitation Tanks
- Eight Filters.
- Two Sludge Filters.
- Open Carriers.
- Land—for final treatment.

Detritus Tank.—This is cone shaped—26 ft. diameter at the top, diminishing to 9 in. diameter at the bottom. It is 16 ft. 6 in. deep. The Sewage enters at one side, flows round the tank, and discharges over a weir into the carrier leading into the precipitation tanks. The sludge from the bottom is carried by a 9 in. pipe to the sludge filter.

Precipitation Tanks.—Each tank is divided into two parts, the smaller part being at the inlet end.

The measurement of the parts are as follow—

Smaller part—10 ft. x 19 ft. 3 in.—Average depth 7 ft. 1½ in.
Larger part—94 ft. x 19 ft. 3 in.— „ „ 5 ft. 4 in.

The capacity of each entire tank is 68,887 gallons.

The capacity of the nine tanks is 619,983 „

The Sewage enters the small part of each tank from the common carrier over a weir, and flows from the small part to the larger part in a thin stream, over the dividing wall.

Filters:—

No. 1	measures	129ft. 0in. x 43ft. 4in.	5590 sq. ft.	621 sq. yds
„ 2	„	125ft. 0in. x 37ft. 0in.	4625 „	514 „
„ 3	„	125ft. 0in. x 31ft. 3in.	3906 „	434 „
„ 4	„	126ft. 0in. x 36ft. 0in.	4536 „	504 „
„ 5	„	„ „ „ „	„ „	504 „
„ 6	„	„ „ „ „	„ „	504 „
„ 7	„	„ „ „ „	„ „	504 „
„ 8	„	„ „ „ „	„ „	504 „
Total Filtering Area				— 4089 „

The average Area of each Filter is 511 square yards.

Allowing 250 gallons per square yard, each Filter will treat 127,750 gallons in 24 hours. The present flow of the Sewage to the Hough Side Sewerage Works is 405,094 gallons per day. From 5 o'clock in the morning to 9 o'clock at night, 311,810 gallons passes in 16 hours, or about 19,488 gallons per hour (average). From 9 o'clock at night to 5 o'clock in the morning, 93,284 gallons pass in 8 hours (during the night) or 11,660 gallons per hour (average).

The minimum flow is at 4 a.m., 10,515 gals.

The maximum flow at 3 p.m., 25,256 gals.

The filtering medium is 4ft. 6in. thick, and is composed of the following materials, viz:—

Bottom layer. Rough Stone, pitching 12in. thick.

2nd layer. Broken stones, 12in. thick, about 4in. in diam.

3rd layer. Broken stones, 12in. thick, about 2in. in diam.

4th layer. Screened ashes, 18in. thick.

The filters are arranged so that No. 1 can be discharged on to No. 3, from No. 3 to No. 5, and so on. And in the same way, Nos. 2, 4, 6 8. The first six filters are not water tight. Nos. 7 and 8 are concreted so that they hold sewage.

Sludge Filters.—The filtering material is the same as in the effluent filters.

Land for Final Irrigation.—About 12 acres are in use.

Cost of Works:—

Tanks	..	...	5,273
Filters	...	...	4,377
Land	...	...	6,040
<hr/>			
Total	...	...	£15,690

Trade Effluents. The mills in the district are obliged to have preliminary treatment works to remove the gross solids from their affluents. Most of the mills have both tanks and filters, some only precipitation tanks.

Present Method of Treating the Sewage.—This has been in operation for about $2\frac{1}{2}$ years. Two outfall sewers continuously discharge the sewage into the detritus tank. A large amount of the suspended matter is deposited in the bottom of this tank as sludge. This sludge is about once a month discharged on to the sludge filter. The sewage flows round the tank and over a weir in a thin stream into an open carrier. There is an inlet to each tank from this carrier, and the sewage is divided equally to flow through the nine tanks, so that a ninth part of the flow is treated in each tank, passing first through the smaller and afterwards through the larger compartment. It takes about a day and a half to cross the whole tank. The heavier suspended matter deposits in the small compartment. From the smaller compartments the sewage flows in a thin stream over the dividing wall into the larger ones, and in flowing across them again deposits more sludge. So far, that is for $2\frac{1}{2}$ years, no sludge has been removed from any part of these tanks. Mr. Swithenbank, the works manager, states that the smaller compartments are now nearly half full of sludge, and the larger ones about one third full. This is only approximate. The depth of sludge is larger at the inlet than at the outlet end.

All the nine smaller compartments are covered with a thick scum. There is no permanent scum on the larger ones, but thick flakes come to the surface in warm weather, and sinks again when the weather is windy or cold. Gases are constantly rising, and the effluent, when leaving the tanks, smells offensively. The effluent leaves the nine tanks from a submerged outlet—to keep back the scum—and falls into an open carrier, in which it is aerated by passing over steps. It is then distributed over four filters in succession by means of wooden carriers with offshoots. The flow

is continuous night and day. The four filters are worked for a week, and then allowed to rest for a week while the other four are in use. During the resting week the carriers and offshoots are cleaned out, and the surface of the filters raked over. The effluent from the filter is finally treated on about 12 acres of land, which is divided and worked in three sections, each section taking the flow for a fortnight and resting a month.

The sludge from the detritus tank is dried on the sludge beds, and then removed and sold to market gardeners and farmers. There seems to be no doubt about its high manurial value.

During the year 380 loads of sludge were removed.

Smalewell Sewage Disposal Works.—These works have been in use for seven years. The drainage area served by them has a population of about 3,000, and includes 3 woollen mills.

The works comprise :

An Open Mixing Channel.
Three Precipitation Tanks.
Eight Filters.
One Sludge Filter.
Land—for final treatment.
Open Carriers.

The average daily flow of Sewage is 76,000 gallons.

Precipitation Tanks.—

No. 1 has a capacity of 35,912 gallons.

No. 2 „ „ 36,775 „

No. 3 „ „ 42,269 „

Total .. 114,956 „

The three tanks are on the same level—Nos. 1 and 2 can be coupled together.

Filters.—

area—Nos. 1, 2, 3, 4, 5, 6—1045 sq. yds. total area.

„ Nos. 7 and 8 945 „ „

Total Filtering Area sq. yds.

The filtering material is 3ft. 6in. thick, in layers.

1st layer	bottom	9in.	Pitchers (on edge)
2nd	„	9in.	Broken Stone, 4in. diam.
3rd	„	9in.	„ „ 2in. „
4th	„	5in.	Rough Ashes
5th	top	10in.	Fine Ashes.

The first six filters cannot be coupled together, but the effluent from them can be run on to Nos. 7 or 8.

Land for Final Treatment.—About one area.

Present Method of Treating the Sewage.—The sewage is both domestic and manufacturing, as a rule strongly acid. The sewage is conveyed to the works by a 15in. pipe into the mixing channel, and treated with lime. This is done in a primitive method, by hand. Twenty-one tons of lime (about 13.7 grains to the gallon) were used in 1903. After the lime treatment, the sewage is passed into the tanks, and, in dry weather, is allowed to rest for about six hours, and then run on to the filter. The sludge is removed from the tanks about every six weeks. The tank effluent is then passed through two continuous filters, and then finally on to prepared land.

221 loads of sludge were removed in 1903.

Quality of Sewage and Effluents.—A general idea may be obtained from the analyses on pages 24 and 25, made by Mr. Swithenbank, the Works manager, and on page 26, copied from the laboratory reports of the West Riding Rivers Board.

HOUGHSIDE SEWAGE WORKS.

COMPARATIVE TESTS BY OXYGEN ABSORBED.

1903 Date	Number of Beds Working.	Oxygen absorbed 4 hours' test Parts per 100,000						Temper- ature of Room	Percentage Purification on Sewage						
		Sewage	Tank Effluent	1st Filter	2nd Filter	3rd Filter	4th Filter		Final Effluent	Tank Effluent	1st Filter	2nd Filter	3rd Filter	4th Filter	Final Effu- ent
May 27th	3 and land	26.16	7 60	5.472	4 768	3 040	Not Completed	22° C	70.94	79.08	81.77	88.45	Not Completed	94.74	
July 9th	3 and land	18.40	8 64	6 560	4 992	3 168		28° „	53 04	64 34	72 87	82.78		85.39	
Aug. 6th	4 and land	27 20	14.16	8 000	5.840	4 000	3 456	19° „	47 90	70.58	78 58	85 29	87.27	92.00	
Nov. 18th	4 and land	13 28	8.64	5.880	3 840	2 368	1.952	12° „	34 94	55 72	71 08	82 19	85 30	89 69	
Dec. 3rd	4 and land	12.16	8 56	6 712	5 319	4 610	3 584	9° „	29 60	44 80	56 25	62 09	70 52	80 78	
Average		19.44	9.52	6 52	4 95	3 43	3.00	18° „	47 28	62 90	72 10	80.15	81.03	88.52	

Note—All these samples were taken in dry weather.

SMALEWELL SEWAGE WORKS.

COMPARATIVE TESTS BY OXYGEN ABSORBED.

1903. Date.	Oxygen absorbed. Four hours' test. Parts per 100,000.				Temperature of Room.	Percentage purification on Sewage.			Remarks.
	Sewage.	Tank Effluent	First Filters.	Final Effluent		Tank Effluent	First Filters	Final Effluent	
Feb. 13th	12.48	4.384	2,832	1.712	16° C	65.22	77.30	86.28	Dry Weather
„ 18th	14.32	5.280	3.152	2.208	17° „	63.12	77.98	84.57	„ „
Mar. 11th	11.20	4.832	2.848	1.760	17° „	56.85	74.57	84.28	Slightly Deluted
April 1st	9.76	6.048	4.256	2.880	16° „	38.03	56.39	70.50	Dry Weather
„ 16th	13.60	2.240	1.248	0.848	14° „	83.53	90.82	93.76	„ „
„ 23rd	12.96	6.640	4.640	3.152	15° „	48.76	64.20	75.68	„ „
„ 30th	13.76	5.320	3.648	2.56	16° „	61.33	73.50	81.40	„ „
May 21st	12.80	5.000	3.168	2.048	24° „	60.94	75.25	84.00	„ „
„ 28th	11.28	4.240	2.624	1.728	20° „	62.40	76.73	84.68	„ „
July 9th	18.08	7.240	4.448	2.496	28° „	60.00	75.40	86.19	„ „
„ 22nd	15.28	6.120	1.952	0.992	21° „	60.00	87.22	93.50	„ „
Aug. 6th	18.40	6.200	3.872	3.680	20° „	66.30	78.95	80.00	„ „
Sep. 1st	14.40	6.080	3.616	2.368	19° „	57.77	74.89	83.55	„ „
„ 24th	17.04	5.760	3.840	2.880	18° „	66.20	77.40	83.10	„ „
Nov. 11th	16.00	4.240	2.720	2.304	14° „	73.50	33.00	85.60	„ „
„ 19th	13.92	4.096	3.680	3.328	11° „	70.57	73.56	76.09	„ „
„ 25th	8.08	2.592	1.792	1.280	12° „	67.92	77.82	84.16	Diluted.
Average	13.72	5.07	3.19	2.25	17.5 „	62.49	76.18	83.37	

SANITARY INSPECTOR'S REPORT.

TO THE MEDICAL OFFICER OF HEALTH.

SIR,

I beg to submit my first Annual Report of the work carried out in the Sanitary Department, together with details of Scavenging for the year 1903.

Inspection of District.—In compliance with Section 92 of the Public Health Act, 1875, and the General Orders of the Local Government Board the District has been regularly inspected.

Overcrowding.—During the year three houses, two in Stanningley and one in Greenside Ward were found to be overcrowded, in each case the nuisance was abated, after preliminary notice was served.

Sale of Food and Drugs Act.—During the year 17 milk samples were taken; 14 had a composition complying with the requirements of the Board of Agriculture. Two were broken in transit to Analyst. One was found to be adulterated, legal proceedings were taken and the purveyor was fined £1 and costs. It was also necessary to take proceedings against a purveyor for refusing to supply a reasonable quantity. He was fined 5s. and costs.

House Drainage and Sanitary Arrangements.—A great amount of time and attention was given during the year to house drainage, and 42 offensive and insanitary privy middens were converted into water closets, and dust bins were provided. (For length of Drains, etc., see Surveyor's report.)

Gully Cleansing.—I regret that I am unable to report that this work is being carried out satisfactorily. The Sanitary Committee require all the gullies in the Borough to be cleansed thoroughly and regularly. This matter is important and I have given it careful consideration, because if gullies are neglected they become miniature cesspools, are very offensive, and soon lead to choked drains. A review of the work done by one scavenger during the day will explain the cause of failure.

Scavenger commences work at 6-30 a.m.

The carts arrive at ... 7-0 a.m.

The average number of loads per day of 9 hours for one man is six, thus making about $1\frac{1}{2}$ hours per load. The refuse is to throw out of middens in readiness for carts, and then to throw into carts. The ground is afterwards thoroughly swept and sprinkled with carbolic powder. The scavenger is sometimes standing in excrement and liquid filth from 2 inches to 10 inches deep, and consequently his boots and occasionally his clothing become contaminated with objectionable matter. From a sanitary point of

view alone, even if it were possible to cleanse every gulley in the district under the present system, the scavenger would abate one nuisance by cleansing the gullies and create another equally as dangerous by carrying objectionable matter on his boots, etc., from privy middens and soiling the flags, etc., near the gullies. This cannot be conducive to the health of the children whose age necessarily compels their mothers to keep them within sight, and consequently playing near gullies; nor is it advisable for the scavenger to enter a school yard and cleanse gullies directly after removing refuse from middens.

Dairies, Cowsheds, &c.—These have been regularly inspected during the year. Three cowsheds were found in a very bad condition as regards ventilation, lighting, &c., and as the owners would not make the necessary alterations to comply with the Regulations of the Council, the occupiers caused the same to be closed.

Offensive Trades.—Three persons commenced the trade of tripe boiling without first obtaining the permission of the Council so to do. They apparently did this in ignorance of the law, and a notice from the Council was sufficient to have the trades discontinued without further proceedings.

Contagious Diseases of Animals Acts.—Ten supposed outbreaks of swine fever were reported during the year, and the necessary notices as required by the Board of Agriculture were served. The premises were visited frequently in order to enforce the provisions of the Act, and were under supervision until the notices were rescinded.

Scavenging.—The total cost of scavenging the District for the year was £683 3s. 11d., thus shewing a saving of £17 5s. 11d. on the previous year. The cost was made up as follows:—

	£	s.	d.
Factories Privy			
Dust Bins - Middens ...	657	10	8
Rent of Private Roads ...	17	10	0
Deodorants ...	2	13	9
Cart Covers ...	2	15	6
Repairs to Shovels, etc. ...	0	8	0
Shovels, Forks, Brooms, etc.	2	6	0
	<hr/>		
Total ...	£683	3	11
	<hr/>		
Privy Middens Emptied ...	18,031		
Dust Bins Emptied ...	26,290		
Number of Loads Removed...	5,113	(@ 2/8 per load.	

SANITARY INSPECTOR'S SUMMARY OF WORK, FOR THE YEAR 1903.

Complaints Received...					68
Houses, Premises, &c., Inspected					415
Nuisances Found					359
Result of Inspections.	Orders issued for Abatement of Nuisances	Preliminary	...	...	61
		Legal	Orders of Council		53
			Summonses		2
	Homes, Premises, &c., Cleansed, Whitewashed, &c.					2
Dust- bins.	Ashpits Replaced by Dust-bins				18
	New Dust-bins Provided...				270
Scavenging.	Dust-bins Emptied				26,290
	Dry Ashpits Emptied				
	Privy Middens Emptied...				18,031
	Scavenging for 1903—				£683 3s. 11d.
	No. of Loads Removed				5113
	Cost	Per Load	...	...	2s. 8d.
Gullies Cleansed out...					9039
Inspection Chambers Cleansed					542
Cesspools Cleansed					3
Gullies found blocked...					
Drains Opened and Examined under Section 41					17
Smoke Inspections					19
Food and Drugs—Samples taken					17
Animals Kept so as to be a Nuisance...					8
Regular Inspections.	Cowsheds and Dairies				68
	Slaughter Houses				18
	Mills, Workshops and Bakehouses				44
	Milk Samples				17
Houses Disinfected after Infectious Diseases					91
Schools disinfected					3
Total Number of Nuisances Abated					235

JAMES BELFORD,
Cert. San. Inst

PUDSEY (YORKS)

METEOROLOGY FOR 1903.

Observations taken at 9 a.m. (521 feet above sea-level).

1903	Means at 9 a.m.			Extreme Temperature.				Rain.			Degrees of Humidity.			
	Baro- meter uncor- rected.	Ther- mometer.		Shade.				Total Depth.	No of wet days	Most in one Day.	Saturation—100.			
		Dry Bulb	Wet Bulb	Maximum	Minimum	Highest.	Lowest.				Range.	Mean.		
Ins.	Deg.	Deg.	Deg.	Date	Deg.	Date	Ins.							
Jan. . .	29.50	44°	32°	50°	27	23°	16	1.94	15	.61	100	71	29	88
Feb. ...	29.55	41°	40°	52°	20	32°	2	2.53	16	.71	100	70	30	88
March	29.26	43°	41°	59°	24	34°	3	3.37	17	.77	100	62	38	82
April ...	29.47	43°	41°	55°	26	31°	16	1.07	13	.22	93	44	49	72
May ...	29.50	50°	47°	75°	23	33°	12	4.01	20	.55	100	46	54	73
June ...	29.67	53°	49°	74°	28	42°	14	1.39	9	.45	100	51	49	75
July ...	29.57	58°	55°	76°	11	46°	7	3.35	16	.65	100	54	46	80
August	29.43	57°	55°	68°	9	48°	23	2.95	20	.88	100	76	24	89
Sept....	29.61	55°	53°	69°	5	44°	11	3.55	20	1.20	100	52	48	86
Oct. ...	29.18	48°	46°	61°	2	38°	10	8.13	27	.96	100	66	34	89
Nov. ...	29.57	42°	41°	52°	11	29°	30	1.63	16	.33	100	72	28	87
Dec. ...	29.34	35°	36°	47°	23	27°	30	1.50	18	.42	100	61	39	85
Totals	353.64	569	536					35.42	207		1193			994
Means	29.47	47.4	44.7					2.95	17.2					83
Highest	29.61	58	55	76				8.13	27	.96				Aug. & Oct.
Lowest	29.18	35	32			23		1.07	9			April.		April

DROUGHTS :—None.

Four Feet Ground Temperature—1903.

JANUARY	..	48°.	—	44°.	—	43°.	—	42°.
FEBRUARY	...	42°.	—	43°.	—	44°.		
MARCH	...	44°.	—	43°.	—	44°.		
APRIL	...	44°.	—	43°.				
MAY	..	44°.	—	43.8°.	—	44°.	—	45°. — 46°. — 47°.
JUNE	...	48°.	—	49°.	—	48°.	49°.	
JULY	...	50°.	—	51°.	—	52°.		
AUGUST	...	52°.	—	52.8°.				
SEPTEMBER	...	52°.	—	51°.	—	52°.		
OCTOBER	...	52°.	—	51°.	—	50°.	—	49°.
NOVEMBER	...	49°.	—	48°.	—	47°.		
DECEMBER	...	47°.	—	46°.	—	45°.	—	44.9°.

MINIMUM Feb. 20th to 28th 42°.

MAXIMUM ... Aug. 16th to 21st 52.8°.

Two and Half Feet Ground Temperature.

JANUARY	...	40°.	—	39°.	—	41°.	—	42°.
FEBRUARY	..	42°.	—	43°.	—	44°.	—	45°. — 44°.
MARCH	...	43°.	—	42°.	—	41°.	—	42°.
APRIL	...	44°.	—	43°.	—	42°.		
MAY	...	44°.	—	45°.	—	46°.	47°.	48°.
JUNE	...	51°.	—	52°.	—	53°.	—	54°.
JULY	...	54°.	—	55.8°.				
AUGUST	...	55°.	—	54°.	—	53.9°.		
SEPTEMBER	...	54°.	—	53°.	—	52°.	—	51°.
OCTOBER	..	52°.	—	51°.	—	50°.	—	49°.
NOVEMBER	..	49°.	—	48°.	—	47°.	—	46°.
DECEMBER	...	44°.	—	43°.	—	42°.		

MINIMUM ... January 19th to 24th 39°.

MAXIMUM ... July 13th to 14th 55.8°.

